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Project Governance in Malaysia Hillside Developments

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Abstract

Hillsides in urban areas around the world are being developed at an accelerating rate, to accommodate population growth and rapid urbanization. Developments at hillside are attractive places to live because of the views, fresh air, exclusivity and the sense of being close to nature. Despite its attractiveness, hillside developments are prone to natural hazards such as landslides that can have environmental, social and economic consequences. To minimise these risks, it is necessary to consider the concerns of all stakeholders during the project review stage. This paper proposes that project governance concept can be used for this purpose by defining the rights, responsibilities and interests of the key stakeholders. It can also provide a framework within which decisions are made in order to minimise risks associated with natural hazards.

Keywords

Decision-making, hillside development, project governance, project review

1. Introduction

Hillsides developments are viewed as attractive places to live because of the impressive view, natural beauty, fresh air and exclusivity (Samah, 2007). Recent years have seen an explosive growth of hillsides development in the world's urban areas as a result of population pressure and rapid urbanization (Schuster & Highland, 2007). The strong demand and attractiveness and exclusiveness of such development have become a profit heaven for many housing developers. Despite its growing attractiveness, hillsides developments are prone to natural hazards. Olshansky (1998) identified natural phenomena, potential geological hazards like landslides or floods, health, safety, and general welfare as issues most relevant to hillside development. Inevitably, hillside development means cutting down the trees that covered the hills. This deforestation can cause many environmental hazards and the function of the forests itself. The residual effects includes accelerated soil erosion, landslides, destruction and extinction of flora and fauna, destruction of water catchment, pollution of water resources and downstream flooding (Chan, 1998b). Hillside developments also increase the risk of urban landslides triggered by rainfall or earthquakes activity (Schuster & Highland, 2007).

These natural hazards associated with hillside development can cause severe economic and social consequences for family and communities, due to permanently unstable site that cannot be repaired or

re-developed (Burke et al., 2002). People living in areas prone to landslides are at risk of significant financial losses because insurance companies do not offer any coverage (Burke et al., 2002; Schuster & Highland, 2007). The affected home and business owner tends to seek restitution for landslide losses from local governments, due to lack of landslide insurance (Schuster & Highland, 2007). Moreover, excessive hillside development can diminish the very views, idyllic surroundings, and wildlife habitats that resident's value (Chan, 1998b). Hence, there is a need to re-examine the hillside developments and its impact.

This paper explores the need to have good project governance during the project review stage in order to minimise the natural hazards associated with hillside developments. Next section begins by describing the challenges faced in the management of hillside development in Malaysia. This is followed by the examinations of how these challenges can be minimised through a good project review during the pre-construction stage. Good project governance principles are next proposed to address the challenges in managing hillside developments during the project review stage.

2. Challenges in Hillside Development in Malaysia

Hillside development in Malaysia was initially developed for tourism and agriculture purposes. Fraser Hill was the first hillside development developed by the British in 1917 as tourist destination, followed by Cameron Highlands in 1925 (Gue & Wong, 2009). The continued growth in the tourism industry has prompted many other high-rise hillside development, mainly in the form of apartments and hotels. The phenomena can be widely seen in Penang Island and Kuala Lumpur. It is anticipated that construction on hillside will continue to increase in the near future, not only for tourism, but as a results of pressures from population growth and other economic activities. For example, the increase in demand for housing with natural beauty and impressive view (Olshansky, 1998), demand for transportation facilities such as highway and expressway, particularly in areas adjacent to densely populated cities, have all required the exploitation of hillside areas. Opening the hillside for development is one of the few ways of helping the government to maintain competitive edge and ensure economic growth. However, hillside development are extremely fragile and sensitive, even minor changes to some parts can severely affect surrounding areas, resulting adverse consequences to the economic, environment and public safety in general (Chan, 1998a).

The fragility of the nature condition of hillside areas has prompted the formation of numerous regulations and guidelines by government and private agencies to guide these developments. This is to ensure that a balance is achieved between safety and welfare of property owners, as well as the sustainability of the areas. In Malaysia, hillside development falls under the jurisdiction of the local authority but both of the State Government and the Federal Government also has power to regulate hillside development. Each government agency and state authority has their own guidelines to be followed by developers and consultants. For example, the State of Selangor and Penang have imposed the requirements of an Independent Geotechnical Report to be submitted by separate engineers for areas falls under the category of high risks (Jaapar, 2006). On the environmental aspects, The Environment Quality Act 1974 requires the developer to conduct an Environmental Impact Assessment (EIA) for projects covering 50 hectares or more. This, in accordance to Tan (2001) is to fully integrate the environment dimension in the project planning or designing process. During the design and construction stage, developers have to comply with various requirements, such as Section 70 of the Street, Drainage & Building Act whereby submission of infrastructures and building plans must be done before construction is allowed (Gue & Tan, 2004). On the safety aspects, earthwork plans should clearly indicate the conditions of the slopes, subsurface drainage details, retaining systems and strengthening measurement, not only to the development site but also within the vicinity which may foreseeable affect the proposed building, if the slope fails (Gue & Tan, 2004). During construction stage, the officers of local authority and government agencies must continue to monitor the implementation of development projects to ensure that they are carried out according to approved plans or design.

Although many regulations and guidelines have been formulated for governing and protecting the hillside development, the problems associated with such developments continue to increase. There are a range of triggering and contributory factors leading to landslide in hillside development. Literature investigating landslide in Malaysia, suggest that most landslides were caused by failures of design (Gue & Tan, 2006; Samah, 2007), poor construction practise and inadequate maintenance (Gue & Tan, 2002, 2006), lack of systematic regulatory measures to address safety problem of hillside (Gue & Tan, 2000, 2002), lack of communication and close coordination among various parties involved (Gue & Tan, 2002; Rasip, 2006) and lack of monitoring and enforcement (Bahari, 2009; Rasip, 2006). Many of these causes can be attributed to human factors that lead to poor decision making. For example, in reviewing the case histories of landslide in Malaysia, IEM (2009) summaries the causes of the failures as inappropriate analysis and design, lack of quality assurance and control during construction, inappropriate site supervision and lack of communication among various party during construction. Similarly, Samah (2007), who conducted a case study of hillside problems in Bukit Antarabangsa, Selangor found that professionals involved in hillside developments were not conscious of the regulations and failed to adopt good planning and design practice for hillside development.

Design error is recognised as the most important risk for the success of a project that leads to cost overruns and delay (Andi & Minato, 2003; Kaliba et al., 2009; Sweis et al., 2008). Gue & Tan (2006) who investigate the hillside development projects in Malaysia also found that 60% of 49 landslide cases were due to design errors caused by lack of appropriate design check and 20% were caused by a combination of design and construction errors. Lack of communication and close coordination among project participants during the early stage also contribute to the many failure of hillside development. For example, Rasip (2006) found that there is a lack of communication and coordination among responsible technical departments in protecting the development of hillsides. The reasons identified include omission in reviewing application plans by local authorities, lack of duties segregation and overlapping areas of enforcement and responsibilities. This lead to decision making problem where decision makers have been poorly advised by the respective authorities that may also lack of the skill and knowledge on the danger and consequences in approving the development (Rasip, 2006). This resulted in approvals for hillside development without compliance with guidelines and proper planning procedures. A similar investigation by Public Work Department of Malaysia (PAM, 2008) in the Federal Government's Commission Investigation Report into landslide of Bukit Antarabangsa, Selangor, also found that the weaknesses are in term of lack of competent expertise among local authorities and developers. Specifically, hillside development problems are attributed to the lack of competent expertise by local authorities in verifying and evaluating safety aspects of hillside development and approval been made without compliance with relevant guidelines

Hence many of the problems associated with hillside are caused by human errors in the early phase of the development. This is supported by Corrie (1991) who found that the causes of project failures occurring during implementation or after completion can often be traced back to deficiencies in the planning stages. Similarly, Frimpong et al (2003) found that most of hillside failures can be reduced if identified at the early stage of the development project. Therefore, good practice and effective project planning, controlling and monitoring should be established early in order to enhance project performance. In short, any decisions make at the early project stage have the "ability to influence", which can save time and money downstream in the project (Andi & Minato, 2003; Faniran et al., 2000).

The above suggests that legislation and guidelines alone are insufficient to alleviate problems associated with hillsides development. There is a need for authorities to evaluate all hillsides development proposals during the early stage to ensure that all the requirements of stakeholders as well as those set out in the regulations and guidelines are complied with before construction.

3. Project Review in Hillside Development

Many of the problems associated with hillside developments can be traced back to poor decision-making during the planning stage and resulted in approval of developments that have not complied with the necessary safeguards incorporated into the regulations and guidelines. Moreover, many decisions made during the project review stage on hillside development are often complex, which involve many different stakeholders and typically require multidisciplinary knowledge. Hillside developments often involve different professional values and contradictions between public safety and environmental protection goals (Olshansky, 1998). Developers and their consultants may see hillside as an aesthetic opportunity for development where they can gain profit from it, while government agencies may see it as a public safety problem. Therefore, it is necessary to look at the impact of development on the hillsides from multiple viewpoints. This can reduce the poor decision being made during the project review stage thus reduces the natural hazard related to hillside developments.

For this reason, a project review for hillside developments must be conducted during the pre-construction stage i.e. during the conceptual and before the implementation or construction stage. A project review is defined as an assessment of the status of a project, at a particular point in time, which can be used to control project quality, progress and cost (Gandhi & Sauser, 2008; Kess & Haapasalo, 2002; Liu & Yetton, 2007; Oakes, 2008). The primary purpose of project reviews is to clarify project plans, provide insight into process activities and to verify that processes have been established and correctly implemented. Project reviews can add value by providing clear and independently validated information to the project stakeholders. It can also inform the key stakeholder about any adjustments required to achieve the project's goals as this can have a decisive influence on the project's overall success. The benefits of a good project review include earlier identification of risks and issues; adoption of good practice; availability of skills and experience; improved communication; improved ability to allocate resources; improved predictability of project delivery; and greater confidence to take risks (Oakes, 2008). In addition, the review process can also help to foster the active involvement of all project team members that encourages appropriate and timely communication and decision-making. Thus a gate project review during the pre-construction stage for the successful delivery of hillside development projects is pertinent where critical decisions considering the needs of all key stakeholders are made. This is to ensure that only project that has been properly evaluated to meet the needs of all stakeholders is approved to proceed to the next project phase (Sauser, 2006).

To achieve project success, Jugdev & Moller (2006) have suggested that decision made at pre-construction stage must (1) address all keys stakeholders' needs and wants; (2) support overall project lifecycle; and (3) encourage and maintain good relationship and effective communications among key stakeholders. The lack of these key principles can be seen in the Malaysia hillside development as discussed in the previous section. In fact, many of the problems identified in Malaysian hillside development revolve around poor accountability to the projects, no right person in making decision of the project due to lack of knowledge and experiences, no close coordination among stakeholders, lack of communication among project participants. These are all symptoms of ineffective project governance as suggested by Garland (2009). These symptoms include large and ineffective decision-making committees, consensus decision making that involves many people across the organisation, avoid making decisions i.e. "analysis paralysis", a purchaser/provider model that is causing conflict, disgruntled stakeholders, lack of clarity around decision-making responsibilities, confused project ownership, ownership residing with the project delivery group rather than the service delivery business unit. This ineffective project governance observed in hillside developments resulted in decisions to approve projects without proper evaluations during the pre-construction stage. One way to overcome these problems is through the development of effective project governance where the accountability, transparency, responsibilities and interests of all stakeholders are clearly described. Therefore, by having good project governance to guide the project reviews process will improve the performance of pre-construction stage of hillside development projects.

4. Good Project Governance for Hillside development

The concept of project governance is gaining attention in both theory and practical application (Bekker & Steyn, 2008; Du & Yin, 2009). Oxford Advanced Learner's Dictionary (Hornby & Sydney, 2007) defined govern as "to control or influence something" and the word governance as "the activity of controlling a company or an organisation". Governance is thus a framework for decision making and management action of an organisation based on accountability, transparency and defined roles (Muller, 2009). The concept of governance can also be extended for the control of project environment. Project governance can therefore be defined as the process of establishing an institution framework, with clearly defined roles and responsibilities to address the interests of all stakeholders to ensure the success of project management (e.g. see Bekker & Steyn, 2008; Du & Yin, 2009; Ronggui et al., 2009). To ensure effective project governance, Weaver (2007) proposed that an organization must focus on (a) Doing the right projects - organisation must focus on the most suitable project that align with organization's strategic objectives; and (b) Doing the project right - organisation must deliver the selected project in the way that meets or exceeds the stakeholders' expectations in the area of scope, risk, budget and time. The main purpose of project governance is to enable efficient and effective project decision-making (Garland, 2009).

Abednego and Ogulana (2006) suggested that there is necessity for the development of a good project governance concept to integrate project management approach. They further suggested that good project governance should have the following characteristics:

- a) Right decision at the right time, which is a form of active participation;
- b) Contract fairness;
- c) Information transparency, especially between the government and private sector;
- d) Responsive, concrete action/implementation within a reasonable time framework from any decisions made;
- e) Continuous project control and monitoring, in order to achieve the common goal and satisfying all interests;
- f) Equality, between all involved parties;
- g) Effectiveness and efficiency.
- h) Accountability, in the form of user's satisfaction and public community participation.

To achieve these characteristics, Garland (2009) reiterated that good project governance is to ensure the correct person holds the correct positions based on 4 key principles, namely identify a single point of accountability; ensure project governance is service delivery focussed; separate project and organization governance; and separate stakeholder management and project decision making. Single point of accountability ensures clarity and timeliness of decision making. Service delivery ownership determines project ownership. This places the business at the heart of project delivery and ensures the project governance framework maintains a service delivery focus. Separation of stakeholder management and project decision-making activities will prevent decision-making forums from becoming clogged with stakeholders, which would result in laboured or ineffective decision-making. Separation of project governance and organisational governance structures will reduce the number of project decision layers, since the project decision path will not follow the organisational line of command.

Therefore, project governance can provide the structure to guide hillsides development in Malaysia by defining the objectives of the projects, providing the means to achieve those objectives and providing the means of controlling and monitoring performance/progress (Muller, 2009; Turner, 2006). It is anticipated that by developing good project governance in Malaysia hillside development, the project's overall success can be achieved through the coordination and control of the process, harmonizing all stakeholders and defusing their interest conflicts, realizing the value of the project and providing a set of relationship (rights, responsibilities and interests) between stakeholders.

5. Concluding Remarks

Effective management of hillsides development is necessary to ensure a balance is achieved between safety, welfare of property owner and sustainability. This paper suggested that many of the causes of problems associated with hillside development are due to ineffective decision making during the pre-construction stage. It proposed the development of project governance, a framework within which project decisions can be more effectively made to address all the stakeholders' needs, as an appropriate approach to overcome the many undesirable consequences of hillside failure. This framework can be used as a benchmark to develop an effective project governance structure for managing hillside developments in Malaysia. It is anticipated that with such structure in place, hazard related to hillside developments can be greatly reduced.

6. References

- Abednego, M. P., & Ogunlana, S. O. (2006). Good project governance for proper risk allocation in public-private partnership in Indonesia. *International Journal of Project Management*, 24, 622-634.
- Andi, & Minato, T. (2003). Design documents quality in the Japanese construction industry: factors influencing and impacts on construction process. *International Journal of Project Management*, 21(7), 537-546.
- Bahari, A. (2009). Hillslope development: Responsibility of developer, government or land owner?
- Bekker, M. C., & Steyn, H. (2008). The impact of project governance principles on project performance. *Management of Engineering & Technology*, 2008. PICMET 2008. Portland International Conference on (pp. 1324-1330).
- Burke, T. J., Sattler, D. N., & Terich, T. (2002). The socioeconomic effects of a landslide in Western Washington. *Global Environmental Change Part B: Environmental Hazards*, 4(4), 129-136.
- Chan, N. W. (1998a). Environmental hazards associated with hill land development in Penang Island, Malaysia: some recommendations on effective management. *Disaster Prevention and Management*, 7(4), 305.
- Chan, N. W. (1998b). Responding to landslide hazards in rapidly developing Malaysia: a case of economics versus environmental protection. *Disaster Prevention and Management*, 7(1), 14.
- Corrie, R. K. (1991). *Project Evaluation*. London: Thomas Telford LTD.
- Du, Y., & Yin, Y. (2009). Critical Factors Affecting Management Performance of Enterprise Agent Construction Projects in China. *Management and Service Science*, 2009. MASS '09. International Conference on. (pp. 1-5).
- Du, Y., & Yin, Y. (2010). Governance-management-performance (GMP) framework: A fundamental thinking for improving the management performance of public projects. *Scientific Research*, 2(iBusiness, 2010), 282-294.
- Faniran, O. O., Love, P. E. D., & Smith, J. (2000). Effective Front-End Project Management -A Key Element in Achieving Project Success in Developing Countries. Paper presented at the 2nd International Conference on Construction in Developing Countries: Challenges Facing the Construction Industry in Developing Countries.
- Frimpong, Y., Oluwoye, J., & Crawford, L. (2003). Causes of delay and cost overruns in construction of groundwater projects in a developing countries; Ghana as a case study. *International Journal of Project Management*, 21(5), 321-326.
- Gandhi, J., & Sauser, B. (2008). Knowledge Networks: How Independence and Subject Matter Experts Can Influence Project Reviews. *Engineering Management Journal*, 20(1), 19.
- Garland, R. (2009). *Project governance : a practical guide to effective project decision making* London ; Philadelphia Kogan Page.
- Gue, S. S., & Tan, Y. C. (2000). Hill-site development - Planning, design, construction and maintenance considerations. Paper presented at the IEM Seminar on Geotechnical Engineering. Penang, Malaysia.

- Gue, S. S., & Tan, Y. C. (2002). Mitigating the risk of landslide on hill-site development in Malaysia. Paper presented at the *2nd World Engineering Congress*. Sarawak, Malaysia.
- Gue, S. S., & Tan, Y. C. (2004). Guidelines for development on hill-sites (Chapter 7). In *Tropical Residual Soils Engineering* (pp. 103-120). London: Taylor & Francis Group.
- Gue, S. S., & Tan, Y. C. (2006). Landslides: Cases histories, lessons learned and mitigation measures. Paper presented at the *Landslide, sinkhole, structure failure: Myth or science?* Ipoh, Malaysia.
- Gue, S. S., & Wong, S. Y. (2009). Slope engineering design and construction practise in Malaysia. Paper presented at the *CIE-IEM Joint Seminar on Geotechnical Engineering*. Yilan, Taiwan.
- Hornby, A. S., & Sydney, A. (2007). Oxford Advanced Learner's Dictionary Oxford: Oxford University Press.
- IEM (2009). Official statement of Bukit Antarabangsa landslide accident on 6 December 2008, *Jurutera*. Selangor, Malaysia: The Institution of Engineers, Malaysia.
- Jaapar, A. B. (2006). *A framework of a national slope safety system for Malaysia*. University of Hong Kong, Hong Kong.
- Jugdev, K., & Moller, R. (2006). A retrospective look at our evolving understanding of project success. *Engineering Management Review*, 34(3)
- Kaliba, C., Muya, M., & Mumba, K. (2009). Cost escalation and schedule delays in road construction projects in Zambia. *International Journal of Project Management*, 27(5), 522-531.
- Kess, P., & Haapasalo, H. (2002). Knowledge creation through a project review process in software production. *International Journal of Production Economics*, 80(1), 49-55.
- Kululanga, G. K., & Kuotcha, W. B. (2008). Measuring organisational learning through project reviews. *Engineering, Construction and Architectural Management*, 15(6), 580.
- Lim, C. S., & Mohamed, M. Z. (1999). Criteria of project success: an exploratory re-examination. *International Journal of Project Management*, 17(4), 243-248.
- Liu, L., & Yetton, P. (2007). The Contingent Effects on Project Performance of Conducting Project Reviews and Deploying Project Management Offices. *IEEE Transactions on Engineering Management*, 54(4), 789.
- Muller, R. (2009). *Project Governance*. Farnham, Surrey, England ; Burlington, VT Gower.
- Oakes, G. (2008). *Project reviews, assurance and governance* Aldershot, England ; Burlington, VT: Gower.
- Olshansky, R. B. (1998). Regulation of Hillside Development in the United States. *Environmental Management*, 22(3), 383-392.
- PAM (2008). Press statement on Bukit Antarabangsa landslide on 6 December 2008, *Berita Artitek* (Vol. December 2008). Kuala Lumpur, Malaysia: Malaysia Institute of Architects (PAM).
- Rasip, M. K. (2006). *Isu pembangunan di kawasan tanah tinggi dan berbukit (kes kajian: Majlis Perbandaran Ampang Jaya)*. Universiti Teknologi Malaysia, Johor Bahru.
- Ronggui, D., Peng, Y., & Yanwei, W. (2009). Research on the method of selecting project governance subject *Computers & Industrial Engineering*, 2009 (pp. 1125-1130).
- Samah, F. A. (2007). Landslide in hillside development in the Hulu Kelang, Klang Valley. Paper presented at the *Post-Graduate Seminar* Universiti Teknologi Malaysia.
- Sauser, B. J. (2006). Attributes of Independent Project Reviews in NASA. *Engineering Management Journal*, 18(4), 3.
- Schuster, R., & Highland, L. (2007). The Third Hans Cloos Lecture. Urban landslides: socioeconomic impacts and overview of mitigative strategies. *Bulletin of Engineering Geology and the Environment*, 66(1), 1-27.
- Sweis, G., Sweis, R., Abu Hammad, A., & Shboul, A. (2008). Delays in construction projects: The case of Jordan. *International Journal of Project Management*, 26(6), 665-674.
- Tan, A. A. L. (2001). *Project management in Malaysia - a comprehensive approach for successful management of property development projects from inception until completion*. Kuala Lumpur: Synergy Book International.
- Turner, J. R. (2006). Towards a theory of project management: The nature of the project governance and project management. *International Journal of Project Management*, 24(2), 93-95.
- Weaver, P. (2007). *Effective Project Governance – Linking PMI's Standards to Project Governance* PMI Global Congress Asia Pacific 2007. Hong Kong: Mosaic Project Services Pty Ltd. Retrieved 18 May 2010